Electronic TUBES

6EH8

TRIODE-PENTODE

FOR VHF CONVERTER APPLICATIONS

DESCRIPTION AND RATING

The 6EH8 is a miniature tube which contains a sharp-cutoff pentode and a triode in one envelope. It is intended primarily for use as a combined triode oscillator and pentode mixer in television receivers. The 6EH8 incorporates a controlled heater-warm-up characteristic.

GENERAL

ELECTRICAL

Cathode—Coated Unipotential

Heater Voltage, AC or DC	6.3		Volts
Heater Current	0.45±6%		Amperes
Heater Warm-up Time*	11		Seconds
Direct Interelectrode Capacitances	**With Shield†**	**Without Shield**	
Pentode Section			
Grid-Number 1 to Plate, maximum	0.012	0.02	μμf
Input	4.8	4.8	μμf
Output	3.2	2.4	μμf
Triode Section			
Grid to Plate	1.8	1.8	μμf
Input	2.8	2.8	μμf
Output	2.2	1.7	μμf
Heater to Cathode	8.5‡	8.5	μμf

MECHANICAL

Mounting Position—Any
Envelope—T-6½, Glass
Base—E9-1, Small Button 9-Pin

MAXIMUM RATINGS

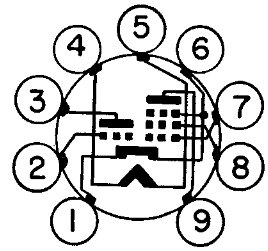
DESIGN-MAXIMUM VALUES	Pentode Section	Triode Section	
Plate Voltage	300	300	Volts
Screen Supply Voltage	300	....	Volts
Screen Voltage—See Screen Rating Chart			
Positive DC Grid-Number 1 Voltage	0	0	Volts
Plate Dissipation	2.8	2.5	Watts
Screen Dissipation	0.5	....	Watts
Heater-Cathode Voltage			
Heater Positive with Respect to Cathode			
DC Component	100	100	Volts
Total DC and Peak	200	200	Volts
Heater Negative with Respect to Cathode			
Total DC and Peak	200	200	Volts
Grid-Number 1 Circuit Resistance			
With Fixed Bias	0.25	0.5	Megohms
With Cathode Bias	1.0	1.0	Megohms

Design-Maximum ratings are limiting values of operating and environmental conditions applicable to a bogey tube of a specified type as defined by its published data, and should not be exceeded under the worst probable conditions.

The tube manufacturer chooses these values to provide acceptable serviceability of the tube, taking responsibility for the effects of changes in operating conditions due to variations in tube characteristics.

The equipment manufacturer should design so that initially and throughout life no design-maximum value for the intended service is exceeded with a bogey tube under the worst probable operating conditions with respect to supply-voltage variation, equipment component variation, equipment control adjustment, load variation, signal variation, and environmental conditions.

BASING DIAGRAM

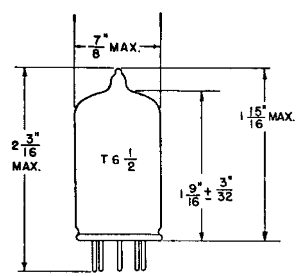


EIA 9JG

TERMINAL CONNECTIONS

Pin 1—Cathode, Pentode Grid Number 3 (Suppressor), and Internal Shield
Pin 2—Triode Grid
Pin 3—Triode Plate
Pin 4—Heater
Pin 5—Heater
Pin 6—Cathode, Pentode Grid Number 3 (Suppressor), and Internal Shield
Pin 7—Pentode Grid Number 1
Pin 8—Pentode Grid Number 2 (Screen)
Pin 9—Pentode Plate

PHYSICAL DIMENSIONS



EIA 6-2

CHARACTERISTICS AND TYPICAL OPERATION

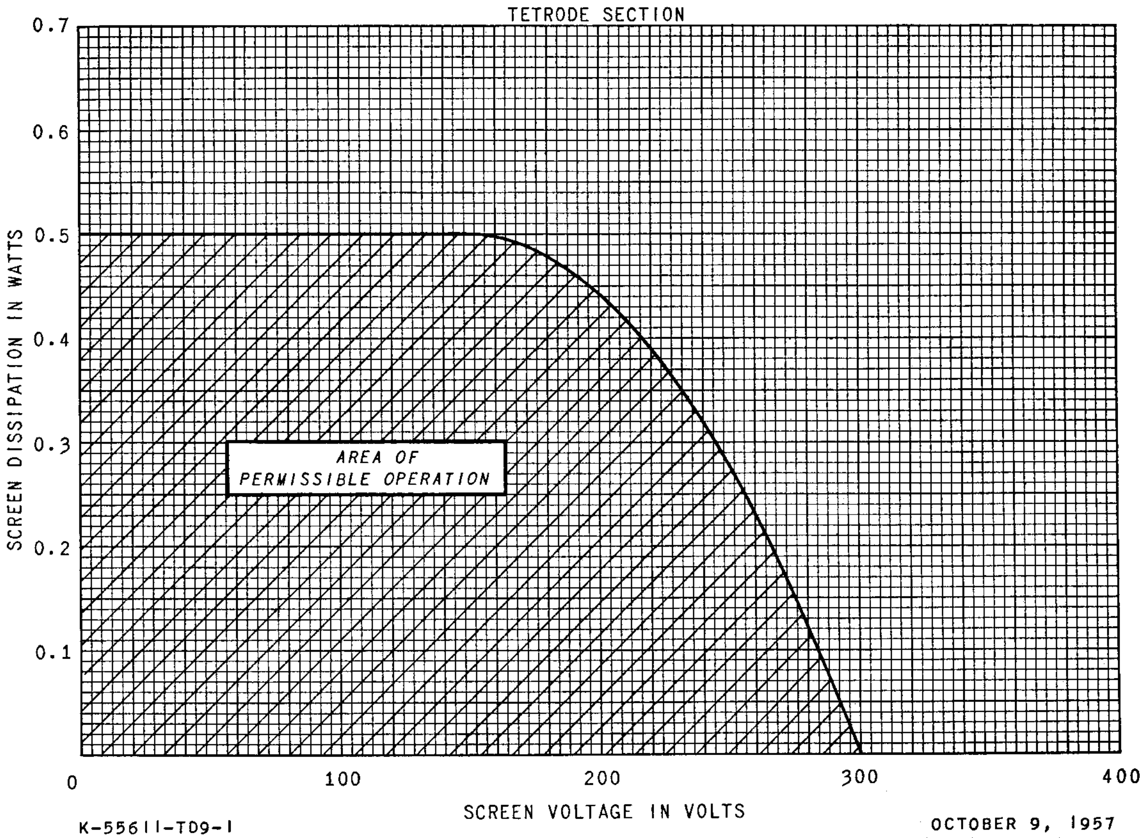
CLASS A_1 AMPLIFIER	Pentode Section		Triode Section	
Plate Voltage	100	125	125	Volts
Screen Voltage	70	125	....	Volts
Grid-Number 1 Voltage	0	−1.0	−1.0	Volts
Amplification Factor	....	....	40	
Plate Resistance, approximate	....	0.17	....	Megohms
Transconductance	6500	6000	7500	Micromhos
Plate Current	....	12	13.5	Milliamperes
Screen Current	....	4.0	....	Milliamperes
Grid-Number 1 Voltage, approximate Ib = 20 Microamperes	....	−10	−9	Volts

* The time required for the voltage across the heater to reach 80 percent of its rated value after applying 4 times rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to 3 times the rated heater voltage divided by the rated heater current.

† With external shield (EIA 315) connected to cathode unless otherwise noted.

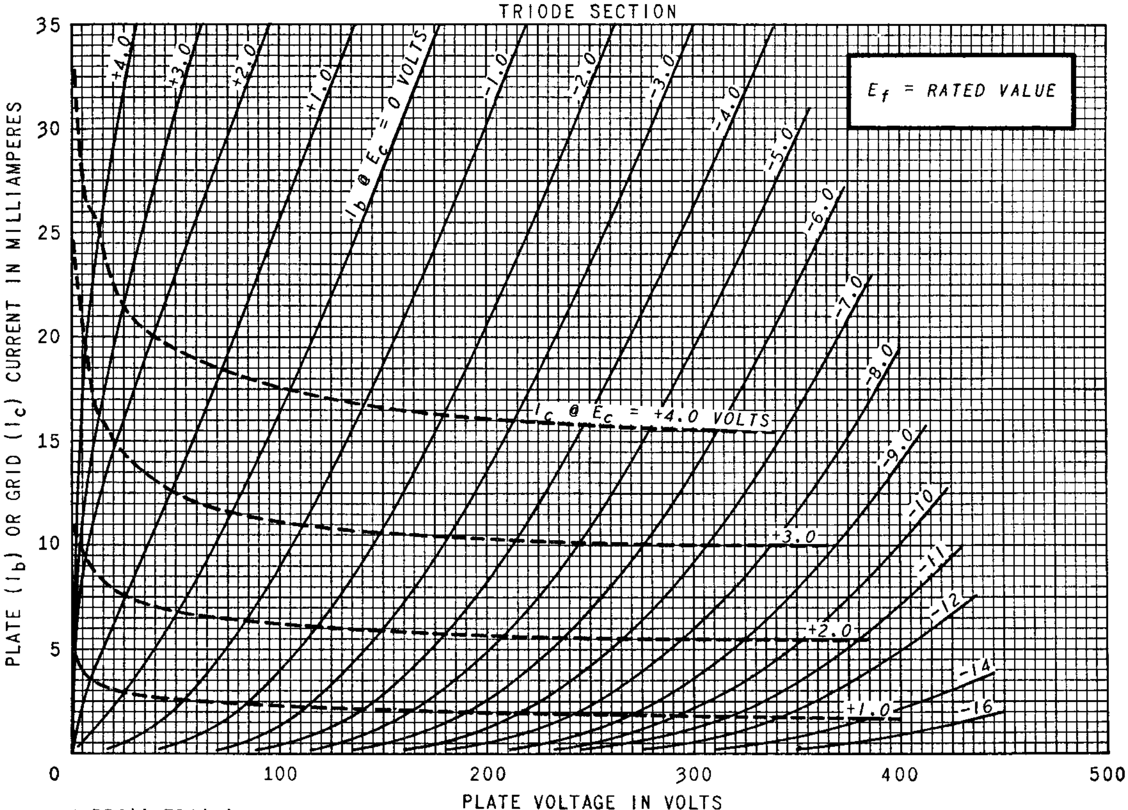
‡ With external shield (EIA 315) connected to ground.

SCREEN RATING CHART



AVERAGE PLATE CHARACTERISTICS

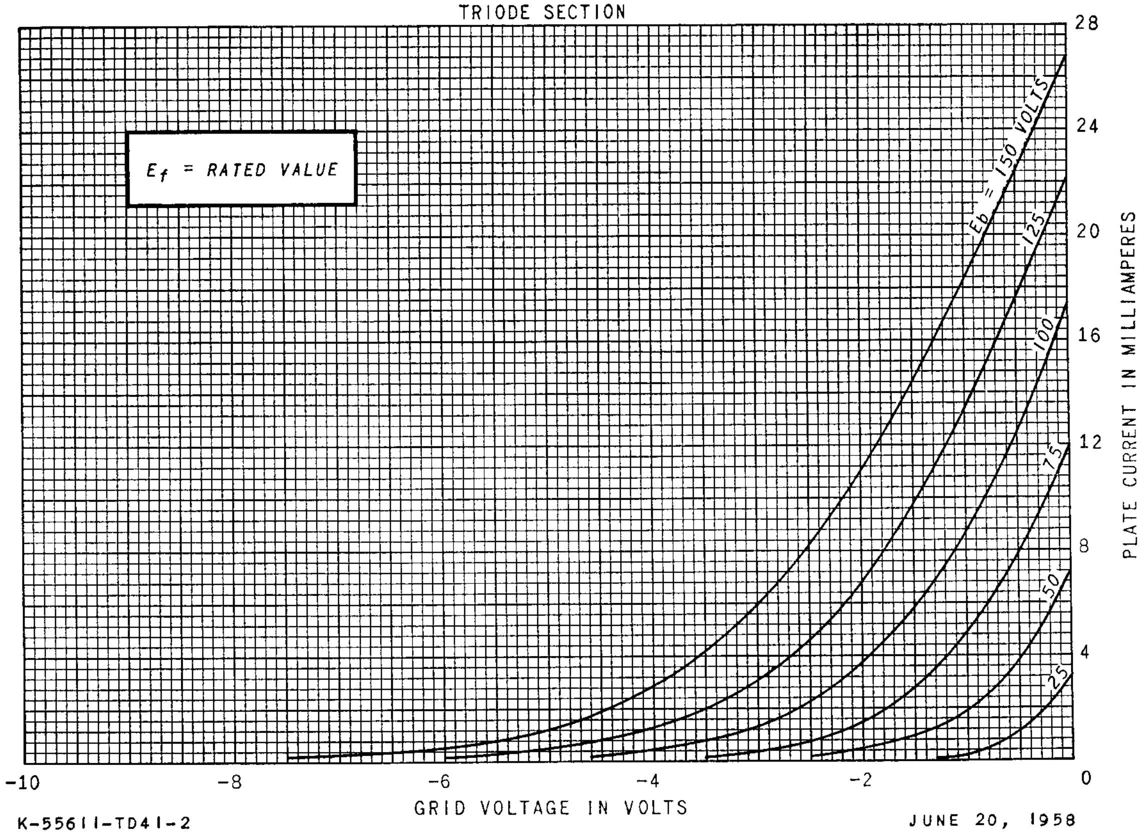
TRIODE SECTION



K-55611-TD41-1 JUNE 20, 1958

AVERAGE TRANSFER CHARACTERISTICS

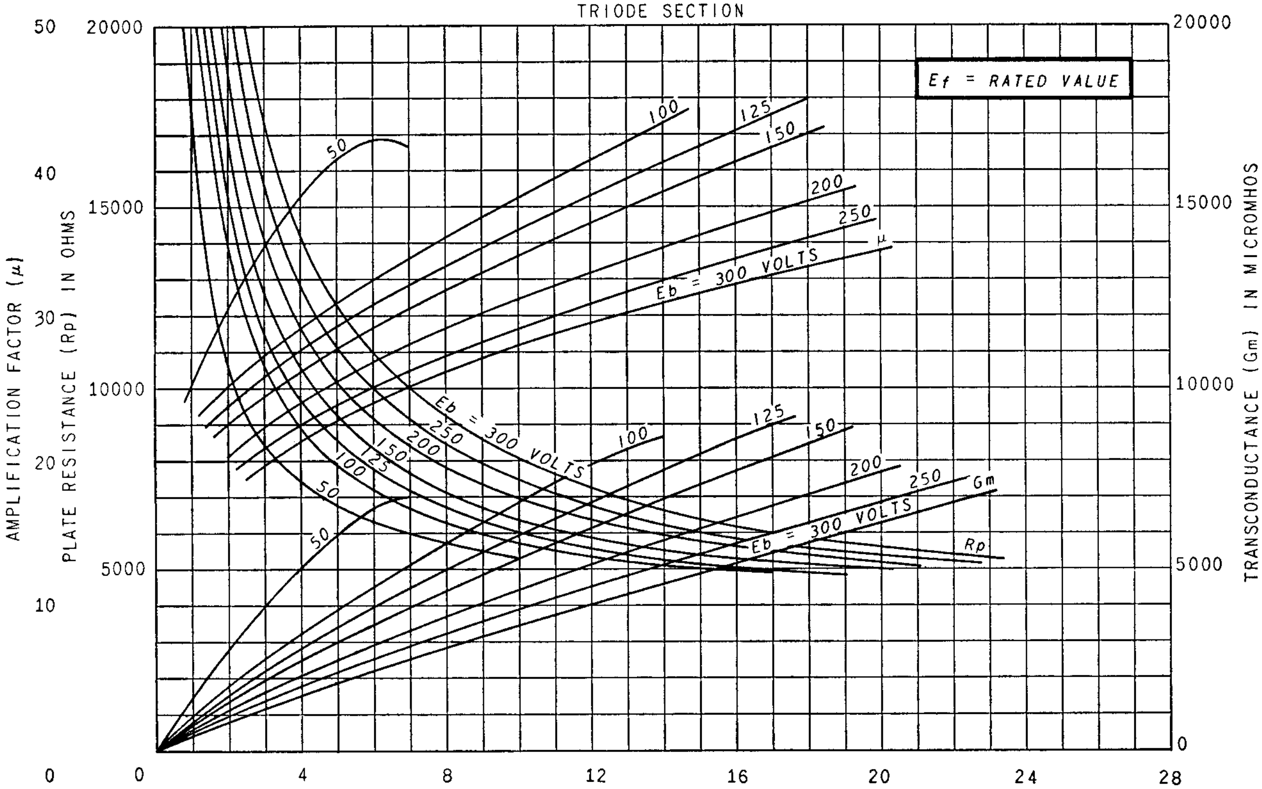
TRIODE SECTION



K-55611-TD41-2 JUNE 20, 1958

AVERAGE CHARACTERISTICS

TRIODE SECTION

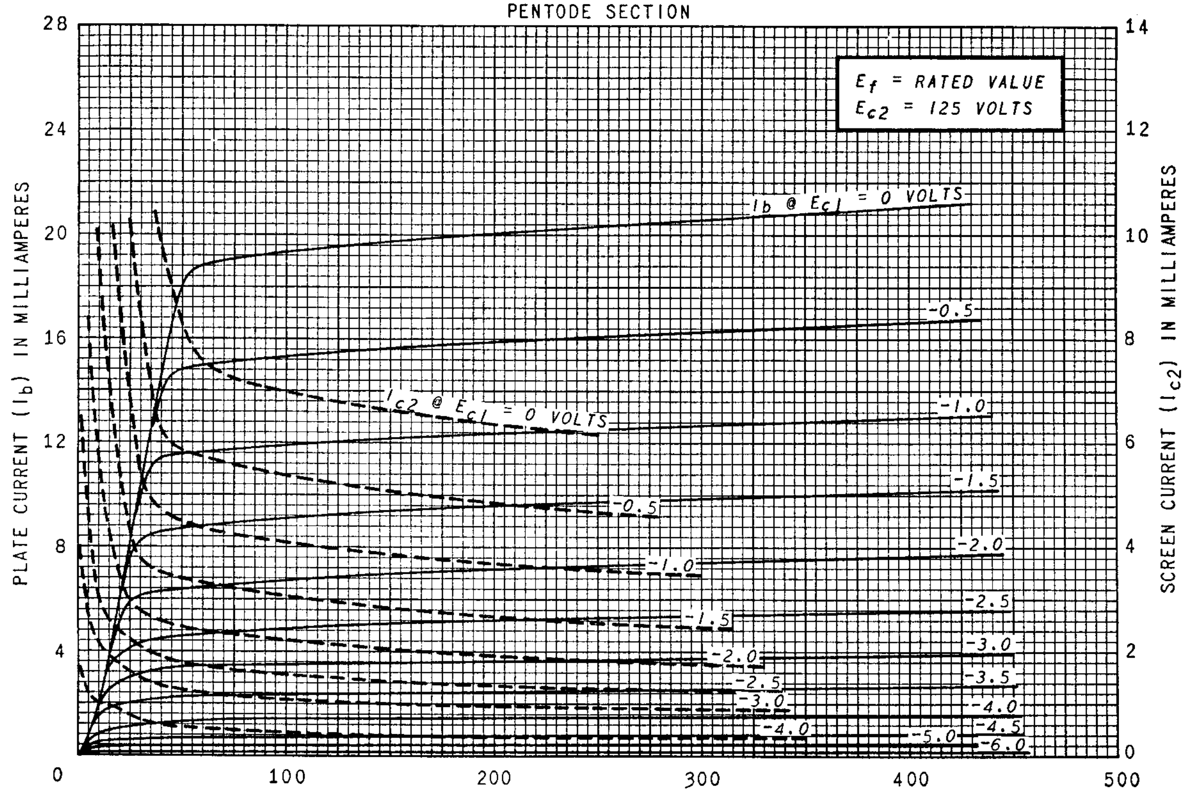


K-55611-TD41-3

JUNE 20, 1958

AVERAGE PLATE CHARACTERISTICS

PENTODE SECTION

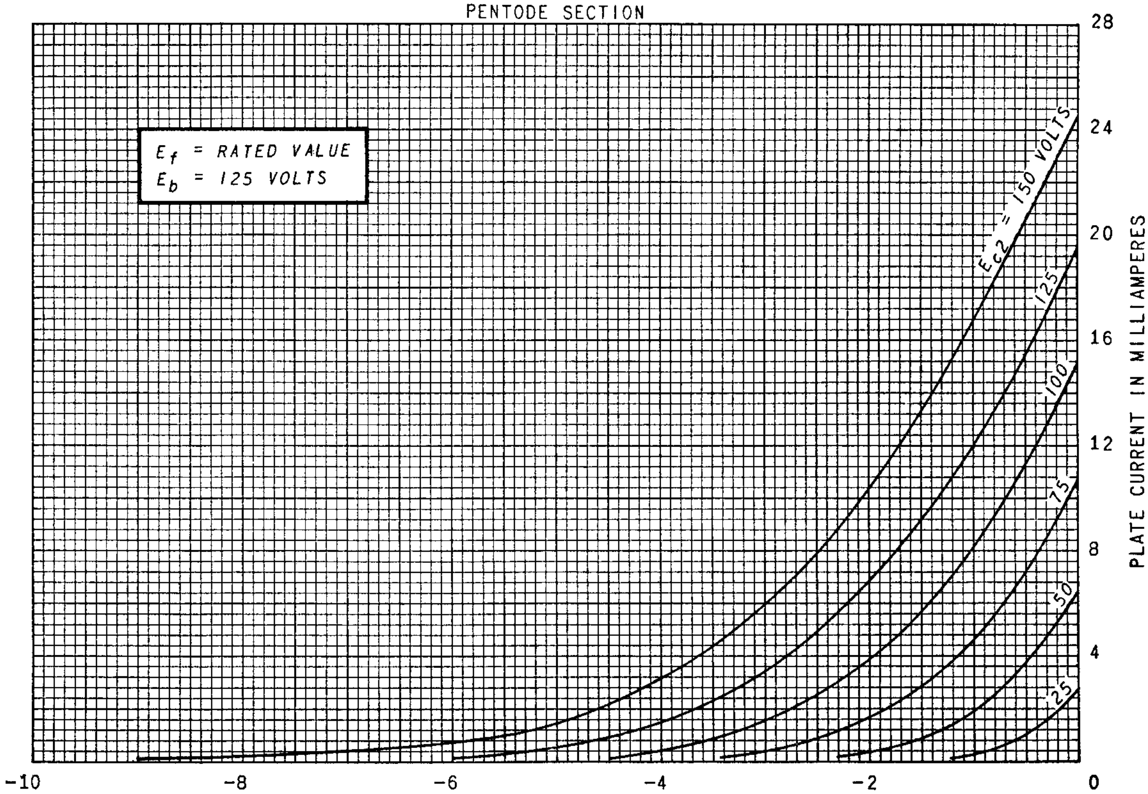


K-55611-TD41-4

JUNE 20, 1958

AVERAGE TRANSFER CHARACTERISTICS

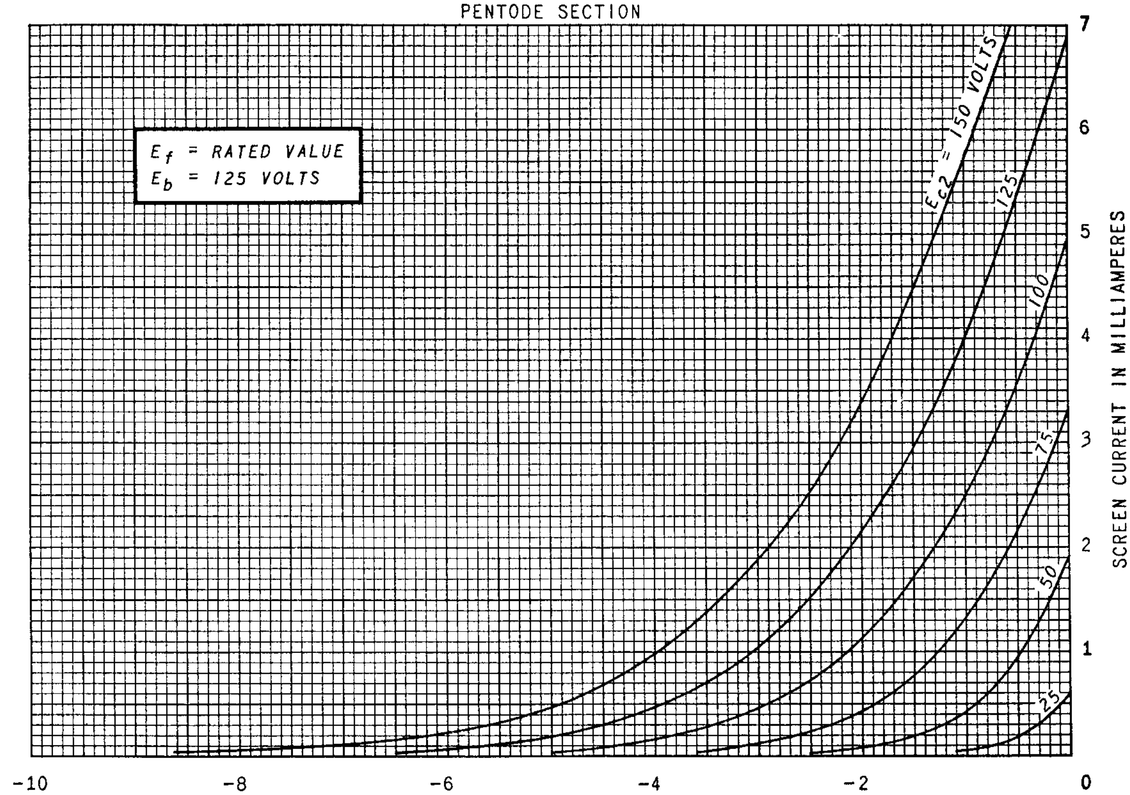
PENTODE SECTION



K-55611-TD41-5 JUNE 20, 1958

AVERAGE TRANSFER CHARACTERISTICS

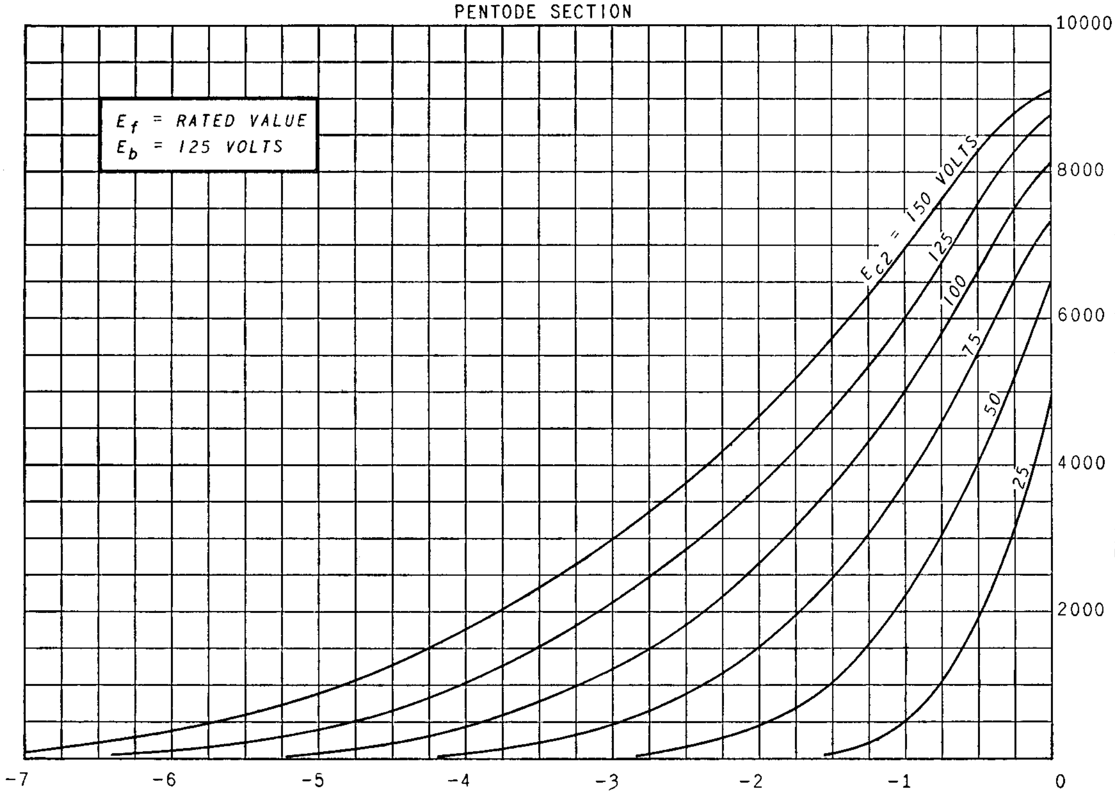
PENTODE SECTION



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AVERAGE TRANSFER CHARACTERISTICS

PENTODE SECTION



K-55611-TD41-7

JUNE 20, 1958

ELECTRONIC COMPONENTS DIVISION

GENERAL ELECTRIC

Schenectady 5, N. Y.